



U.S. Department of Energy  
Energy Efficiency and Renewable Energy

# Solar America Initiative Technology Acceptance



**PV Rating Systems**

**Solar Energy Technologies Program**

**June 12, 2006**



- Your verbal comments today will be used to inform our strategic planning process and our solicitation drafting process.
- SENTECH, Inc. is capturing your comments to the greatest extent possible, although their job is to note important points and general discussion trends, not capture every comment by every participant.
- If you wish to provide further comments on any Technology Acceptance topic, please feel free to respond in writing to the Solar America Initiative Technology Acceptance Request for Information (RFI).  
**COMMENT PERIOD CLOSING JUNE 30, 2006.**
- A link to the RFI is provided on this website:  
**<http://www.sentech.org/SolarTATEM2006/>**



## ***SAI Technology Acceptance Mission***

***Reduce market barriers and promote market expansion of solar energy technologies through non-R&D activities.***

## ***Infrastructure Development***

***Provide technical, regulatory, institutional, financial and educational solutions to technology acceptance barriers***



# Tech Acceptance Pathways for PV Rating Systems



## *Infrastructure Development*

Identify barriers  
to market  
penetration

Identify methods  
to minimize or  
eliminate barriers

**Barriers**

**Methods**

## *Market Expansion*

**Opportunities**

**Methods**

Identify  
opportunities for  
market expansion

Identify methods  
to capitalize on  
opportunities

Technology  
Acceptance  
Strategic Plan

Technology  
Acceptance  
Implementation Plan

**Prioritization**

**Implementation**

Prioritize activities &  
return on investment

Identify tasks,  
performers,  
metrics, budgets  
and timelines



# Features of PV Rating Systems

- National rating system of turnkey PV systems for performance, reliability & warranty information
- Based on standardized test methods & evaluation protocols
- Compatibility with safety standards for PV modules and systems
- Work with stakeholders to understand their needs for PV system ratings and other characteristics to facilitate interconnection, etc.
- Could help overcome/ease trade restrictions in international markets



# PV Rating Systems Barriers



**Most frequently identified non-technical barriers to solar energy implementation, listed in order of frequency.**

**High cost (*being addressed by all SAI activities, including R&D effort*)**

**Lack of trained technical personnel, lack of reliable installation and maintenance services**

**Lack of communication, information dissemination, and consumer awareness**

Inadequate financing options

Lack of appropriate, consistent interconnection standards

Inadequate government incentives (*not covered in this session*)

Lack of equitable and effective net-metering guidelines

**Inadequate codes and standards**

Liability issues / insurance requirements

Poor public perception of solar system aesthetics



# Key Activities: Infrastructure Development



## Develop and promote national rating system for solar electric systems.

- Create national rating system (s) for PV systems that conveys accurate **safety, performance, reliability and warranty** information to builders, utilities, and end users.
- Explore need for regional differences in rating systems.
- Create National positive designation for superior PV systems.
- Focus on systems, not components.
- Engage utilities in rating development process.
- Explore effects on system financing economics & options.
- Boosts consumer confidence.



**End product:** Nationally-recognized rating system and positive designation for PV systems.





## PV Rating Systems Further Questions/Next Steps

1. What is the best approach to insure systems perform and are reliable to at least minimal levels while not stifling innovation and improvements as competitive market drivers?
2. What is the need/justification for any regional differences in the PV rating system and how should this be accomplished?
3. What existing rating systems for comparable technologies could be instructive in this effort?
4. How much consistency is needed with international rating systems?
5. What are the initial and long term financing needs to develop and operate a PV rating system and what are the mechanisms or options available to accomplish this?





# PV Rating Systems Further Questions



6. What is the best organization or kind of org.(s) to develop and manage a PV rating system?
7. What should be the role/relationship of the existing PV safety rating organizations to performance and reliability ratings?
8. Is there any risk/concern about PV rating systems functioning as a restraint of trade in competitive market development?
9. What is the need for retesting of modules and systems and/or upgrading standards over time?
10. What other attributes or standards beyond safety, performance and reliability should be distinguished with a PV rating system?



# PV Rating Systems-Further Questions

11. What is the best role for DOE and SAI to play in development of PV rating systems?
12. What are the approaches and implications for developing a national positive designation for superior PV products?
13. Are quality controls needed to assure the integrity of any rating system developed?
14. How can the building and utility community be engaged by SAI?